Appendix B
Glossary[1]

Accuracy
The difference between the approximate solutions obtained using a numerical model and the exact solution of the governing equations. The degree of conformity of a measure to a standard or true value.

Adjustment
Variation of the parameters in a model to ensure a close reproduction by the model of a set of prototype conditions.

Aggradation
The geologic process by which stream beds, floodplains, and the bottoms of other water bodies are raised in elevation by the deposition of material eroded and transported from other areas. It is the opposite of degradation.

Algorithm
A procedure for solving a mathematical problem in a finite number of steps that frequently involves repetition of an operation. A step by step procedure for solving a problem or accomplishing an end. A set of numerical steps or routines to obtain a numerical output from a numerical input.

Alluvial
Pertains to alluvium deposited by a stream or flowing water.

Alluvial Channel
See Alluvial Stream.

Alluvial Deposit
Clay, silt, sand, gravel, or other sediment deposited by the action of running or receding water.

Alluvial Fan
A conical, or fan, shaped deposit at the base of a mountain range where the mountain stream encounters the lesser slope of the valley floor. The deposits are generally coarse and alluvial fans most often occur in arid and semi-arid regions where streamflow is ephemeral and vegetation cover is sparse.

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[1] See also ASTM D 4410-91 "Terminology for Fluvial Sediment," 1991.

Alluvial Stream
A stream whose channel boundary is composed of appreciable quantities of the sediments transported by the flow, and which generally changes its bed forms as the rate of flow changes.

Alluvium
A general term for all detrital deposits resulting directly or indirectly from the sediment transported by (modern) streams; thus including the sediments laid down in river beds, floodplains, lakes, fans, and estuaries.

Alternate Bars
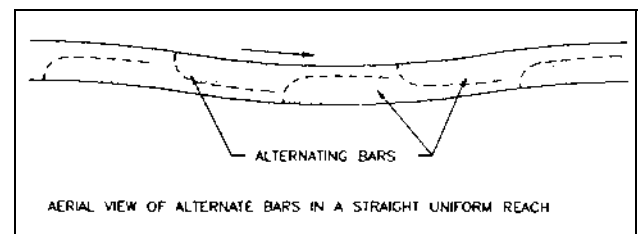Bars formed in a staggered pattern near the banks of channels. See Figure B-1.

Figure B-1. Alternate bars

Analytical Model
Mathematical model in which the solution of the governing equations is obtained by algebraic analysis.

Anomaly
(1) A departure from the expected or normal. (2) A geological feature, esp. in the subsurface, distinguished by geological, geophysical, or geochemical means, which is different from the general surroundings and is often of potential value.

Armoring
The process of progressive coarsening of the bed layer by removal of fine particles until it becomes resistant to scour. The coarse layer that remains on the surface is termed the "armor layer." Armoring is a temporary condition; higher flows may destroy an armor layer and it may reform as flows decrease. Or, simply, the formation of a resistant layer of relatively large particles resulting from removal of finer particles by erosion.

Avulsion
A rapid change in channel direction and form that occurs during catastrophic, rare, floods.

Backwater Curve
Longitudinal profile of the water surface in a stream where the water surface is raised above its normal level by a natural or artificial obstruction.

Bank Migration
Lateral or horizontal movement of the banks of a streamcourse.

Bed Forms
Irregularities found on the bottom (bed) of a stream that are related to flow characteristics. They are given names such as "dunes," "ripples," and "antidunes." They are related to the transport of sediment and inter-act with the flow because they change the roughness of the stream bed. An analog to stream bed forms are desert sand dunes (although the physical mechanisms for their creation and movement may be different).

Bed Load
Material moving on or near the stream bed by rolling, sliding, and sometimes making brief excursions into the flow a few diameters above the bed, i.e. jumping. The term "saltation" is sometimes used in place of "jump-ing." Bed load is bed material that moves in continuous contact with the bed; contrast with "suspended load."

Bed Load Discharge
The quantity of bed load passing a cross section in a unit of time, i.e. the rate. Usually presented in units of tons per day. May be measured or computed. See Bed Load.

Bed Material
The sediment mixture of which the moving bed is com-posed. In alluvial streams, bed material particles are likely to be moved at any moment or during some future flow condition.

Bed or Hydraulic Sorting
See Sorting.

Bed Rock
A general term for the rock, usually solid, that underlies soil or other unconsolidated, superficial material.

Bias
A systematic error introduced into sampling or testing by selecting or encouraging one outcome or answer over others. Bias can be introduced by setting variables or factors which would result in one outcome.

Boundary Conditions
Definition or statement of conditions or phenomena at the boundaries. Water levels, flows, concentrations, etc., that are specified at the boundaries of the area being modeled. A specified tailwater elevation and incoming upstream discharge are typical boundary conditions.

Boundary Effect
Consequence of dissimilarities between the model boun-dary conditions and the conditions occurring in the prototype at the location of the model boundaries.

Boundary Roughness
The roughness of the bed and banks of a stream or river. The greater the roughness, the greater the fric-tional resistance to flows; and, hence, the greater the water surface elevation for any given discharge.

Braided Channel
A stream that is characterized by random interconnected channels divided by islands or bars. Bars which divide the stream into separate channels at low flows are often submerged at high flow.

Calibration
Adjustment of a model's parameters such as roughness or dispersion coefficients so that it reproduces observed prototype data to acceptable accuracy.

Channel
A natural or artificial waterway which periodically or continuously contains moving water.

Channel Stabilization
A stable channel is neither progressively aggrading nor degrading, or changing its cross-sectional area through time. It could aggrade or degrade slightly, but over the period of a year, the channel would remain similar in shape and dimensions and position to previous times. Unstable channels are depositing or eroding in response to some exterior conditions. Stabilization techniques consist of bank protection and other measures that work to transform an unstable channel into a stable one.

Characteristics Method
Numerical method in which the governing partial differ-ential equations of a mathematical model are trans-formed into characteristic (ordinary differential) equations.

Coastal Model
Model of a coastal area. Often a movable bed model used to reproduce coastal sediment transport.

Cohesive Sediments
Sediments whose resistance to initial movement or erosion is affected mostly by cohesive bonds between particles.

Concentration of Sediment
The dry weight of sediment per unit volume of water-sediment mixture, i.e. mg/l or ppm.

Conceptual Model
A simplification of prototype behavior used to illustrate functional relationships.

Confirmation
Process in which a model of a specific study area is built and tested to prove that the model design and implementation is adequate and no major phenomenon has been overlooked.

Consistency
The property of a numerical solution to a set of partial differential equations that, as time and distance steps are decreased, the difference equations approach the differential equations.

Convergence
The state of tending to a unique solution. A given scheme is convergent if an increasingly finer computational grid leads to a more accurate solution.

Conveyance
A measure of the flow carrying capacity of a channel section. Flow is directly proportional to conveyance for steady flow. From Manning's equation, the proportionality factor is the square root of the energy slope.

Cross Section
Depicts the shape of the channel in which a stream flows. Measured by surveying the stream bed elevation across the stream on a line perpendicular to the flow. Necessary data for the computation of hydraulic and sediment transport information.

Cross-sectional Area
The cross-sectional area is the area of a cross section perpendicular to the direction of flow beneath the water surface.

Degradation
The geologic process by which stream beds, floodplains, and the bottoms of other water bodies are lowered in elevation by the removal of material from the boundary. It is the opposite of aggradation.

Delta
A deposit of sediment formed where moving water (as from a stream at its mouth) is slowed by a body of standing water.

Density
The mass of a substance per unit volume. The Greek letter ρ is the common symbol.

Density Current
A highly turbid mixture of water and very fine grained sediment which flows into and along the bottom of a reservoir because its density is relatively larger than that of the standing water in the reservoir.

Depth of Flow
The depth of flow is the vertical distance from the bed of a stream to the water surface.

Deposition
The mechanical or chemical processes through which sediments accumulate in a (temporary) resting place. The raising of the stream bed by settlement of moving sediment that may be due to local changes in the flow, or during a single flood event.

Deterministic Model
Mathematical model in which the behavior of every variable is completely determined by the governing equations and the initial states of the variables.

Digitization
Representation of a continuous process, field, or surface by numerical (digital) values.

Digitize
To convert data from map or graphical form to digital form for use by computer programs.

Dimensionless Number
A physically meaningful ratio of parameters that is dimensionless. These dimensionless ratios are useful in determining scaling laws since a particular dimensionless number must be the same in both model and

prototype to achieve similarity. Examples are the common force ratios, such as the Froude and Reynolds numbers.

Discharge
The discharge, usually abbreviated as "Q", is the volume of a fluid or solid passing a cross section of a stream per unit time.

Discretization
The procedure of representing a continuous variable by discrete values at specified points in space and/or time.

Discretization Error
Error introduced by the discrete representation of a continuous variable.

Distorted Model
Hydraulic model in which horizontal and vertical scales are different.

Distortion
Conscious departure from a scaling law often necessitated by a complex set of prototype and laboratory conditions. The term is most commonly used for geometric distortion in which the vertical and horizontal scales of a hydraulic model are different.

Dominant Discharge
A particular magnitude of flow which is sometimes referred to as the "channel forming" discharge. Empirical relations have been developed between "equilibrium" stream width, depth, and slope and the dominant discharge. It has been variously defined as the bank full flow, mean annual discharge, etc.

Drainage Basin
The area tributary to or draining into a lake, stream, or measuring site. (See WATERSHED.)

Dunes
Bed forms with triangular profile that advance downstream due to net deposition of particles on the steep downstream slope. Dunes move downstream at velocities that are small relative to the streamflow velocity.

Dynamic Model
A mathematical model of flow in an open channel that solves the complete unsteady flow equations (St. Venant equations for one-dimensional problems).

Empirical Model
Representation of a real system by a mathematical description based on experimental or observed data rather than on general physical laws.

Erosion
The wearing away of the land surface by detachment and movement of soil and rock fragments through the action of moving water and other geological agents.

Explicit Scheme
Scheme in which the governing equations of a numerical model are arranged to update the dependent variables in terms of previously known values only. (Compare with IMPLICIT SCHEME).

Finite Element Method
Method of solving the governing equations of a numerical model by dividing the spatial domain into elements in each of which the solution of the governing equations is approximated by some continuous function.

Fixed Bed Model
Model in which the bed and side materials are non-erodible; deposition does not occur either.

Floodplain
Normally dry land adjacent to a body of water such as a river, stream, lake, or ocean, which is susceptible to inundation by floodwaters.

Flood Routing
The process of tracing, by calculation, the course and character of a flood as it progresses through a river reach or a reservoir.

Flow Duration Curve
A measure of the range and variability of a stream's flow. The flow duration curve represents the percent of time during which specified flow rates are exceeded at a given location. This is usually presented as a graph of flow rate (discharge) versus percent of time that flows are greater than, or equal to, that flow.

Fluvial
(1) Pertaining to streams. (2) Growing or living in streams or ponds. (3) Produced by river action, as a fluvial plain.

Fluvial Sediment
Particles derived from rocks or biological materials which are transported by, suspended in, or deposited by streams.

Frequency
The number of repetitions of a random process in a certain time period.

Froude Number
$U/(g \cdot L)^{1/2}$ (U = velocity, g = gravity, L = length). A dimensionless number expressing the ratio between the influences of inertia and gravity in a fluid. The Froude number is important wherever the gravity effect is dominating, such as with water waves, flow in open channels, sedimentation in lakes and reservoirs, salt-water intrusions, and the mixing of air masses of different densities.

Froude Number Model (or Gravitational Model)
Model designed to emphasize similarity of gravitational and inertial forces (Froude Number), while other forces such as viscous (Reynolds Number) may not be reproduced as accurately. Open channel and coastal models are of this type.

Gaging Station
A selected cross section of a stream channel where one or more variables are measured continuously or periodically to record discharge and other parameters.

Geologic Control
A local rock formation or clay layer that limits (within the engineering time frame) the vertical and/or lateral movement of a stream at a particular point. Note that artificial controls such as drop structures also exist.

Geology
A science that deals with the physical history of the earth, especially as recorded in rocks and landforms.

Geometric Similarity
Similarity in form or shape.

Geomorphology
The study of landform development under processes associated with running water.

Grid
Network of points covering the space or time-space domain of a numerical model. The points may be regularly or irregularly spaced.

Heuristic Model
Representation of a real system by a mathematical description based on reasoned, but unproven, argument.

Historic Flows
The collection of recorded flow data for a stream during the period of time in which steam gages were in operation.

Hybrid Model
Model combining at least two modeling techniques (e.g., physical and numerical) in a closely coupled fashion.

Hydraulic Depth
The hydraulic depth is the ratio of cross-sectional area to top width at any given elevation.

Hydraulic Model
A physical scale model of a river used for engineering studies.

Hydraulic Radius
The hydraulic radius is the ratio of cross-sectional area to wetted perimeter at any given elevation.

Hydraulics
The study and computation of the characteristics, e.g. depth (water surface elevation), velocity, and slope of water flowing in a stream or river.

Hydrograph
A graph showing, for a given point on a stream or channel, the discharge, water surface elevation, stage, velocity, available power, or other property of water with respect to time.

Hydrology
The study of the properties, distribution, and circulation of water on the surface of the land in the soil and in the atmosphere.

Ice Model
Model in which formation of ice, ice conditions, or ice forces are simulated.

Implicit Scheme
Scheme in which the governing equations of a numerical model are arranged to obtain solutions for the dependent variables simultaneously at all grid points corresponding to any one time. The computed values depend not only on known values at a previous time but also on the other unknown neighboring values at the

surrounding grid points at the time being calculated. (Compare with EXPLICIT SCHEME).

Impoundment
Body of water formed by collecting water, as at a dam.

Initial Conditions
The values of water levels, velocities, concentrations, etc., that are specified everywhere in the grid or mesh at the beginning of a model run. For iterative solutions, the initial conditions represent the first estimate of the variables the model is trying to compute.

Kinematic Similarity
Similarity of motion.

Linear Model
Mathematical model based entirely on linear equations.

Manning's *n*-Value
n is a coefficient of boundary roughness. *n* accounts for energy loss due to the friction between the bed and the water. In fluvial hydraulics (movable boundary hydraulics), the Manning's *n* value usually includes the effects of other losses, such as grain roughness of the movable bed, form roughness of the movable bed, bank irregularities, vegetation, bend losses, and junction losses. Contraction and expansion losses are not included in Manning's *n*, and are typically accounted for separately.

Mathematical Model
A model that uses mathematical expressions (i.e., a set of equations, usually based upon fundamental physical principles) to represent a physical process.

Meandering Stream
An alluvial stream characterized in planform by a series of pronounced alternating bends. The shape and existence of the bends in a meandering stream are a result of alluvial processes and not determined by the nature of the terrain (geology) through which the stream flows.

Mean Velocity
The mean velocity is the discharge divided by the area of water at a cross section.

Mesh
The network of computational points (nodes) linked together by finite element connection tables to form a digital representation of the modeled area's geometry.

Model
A representation of a physical process or thing that can be used to predict the process's or thing's behavior or state.

Examples:

A conceptual model: If I throw a rock harder, it will go faster.
A mathematical model: F = ma
A hydraulic model: Columbia River physical model.

Movable Bed Model
Model in which the river bed and/or side material is erodible and can be transported in a manner similar to the prototype; can be hydraulic or numerical.

Natural Alluvial Channel
A movable bed in loose sedimentary materials. A "natural alluvial channel" is an alluvial channel created by nature.

Navigation Model
Model to study maneuverability of vessels under currents, waves, wind, etc. for design of navigable waterways.

Network
A system of one-dimensional interconnected one-dimensional streams; also used to describe a MESH.

NGVD
National Geodetic Vertical Datum, vertical datum plane reference that has replaced mean sea level.

Node
The location in a numerical network where computations are performed and/or output is requested.

Nonlinear Model
Mathematical model using one or more nonlinear equations.

Numerical Experiments
Varying the input data or internal parameters of a numerical model to ascertain the impact on the output of those variations.

Numerical Model
A numerical model is the representation of a

mathematical model as a sequence of instructions (program) for a computer. Given appropriate data, the execution of this sequence of instructions yields an approximate solution to the set of equations that comprise the mathematical model.

One-Dimensional Model
Model defined with one space coordinate, i.e. variables are averaged over the other two directions (e.g., wave propagation in a narrow channel).

Overbank
In a river reach, the area between the bank of the main channel and the limits of the floodplain. See Figure-2.

Parameter
Any physical property whose value determines the characteristics or behavior of something.

Phasing
Phasing refers to the timing of flows from the main stem of the river and its tributaries. The arrival of flows into the main stem from the upper watersheds is a function of the size and characteristics of the watersheds, tributary channels, and storm event.

Physical Model
Model using the physical properties and behavior of modeling materials to represent the prototype; a scale model of the prototype.

Planform
The shape and size of channel and overbank features as viewed from above.

Point Bar
Deposits of sediment that occur on the convex side or inside of channel bends. Their shape may vary with changing flow conditions, but they do not move significantly relative to the bends. However, the general magnitude and location of the bar varies with discharge. See Figure B-3.

Probabilistic Model
Mathematical model in which the behavior of one or more of the variables is either completely or partially subject to probability laws.

Prototype
The full-sized structure, system, process, or phenomenon being modeled.

Qualitative
A relative assessment of a quantity or amount.

Quantitative
An absolute measurement of a quantity or amount.

Quasi-Steady-State Model
Model in which time-dependent variables are simulated by a sequence of steady-states.

Quasi-Three-Dimensional Model
A combination of two-dimensional models used to simulate variations in three dimensions.

Reach
(1) The length of a channel uniform with respect to discharge, depth, area, and slope; e.g., "typical channel reach" or "degrading reach", etc., (2) the length of a stream between two specified gaging stations, control points, or computational points.

Reservoir
An impounded body of water or controlled lake where water is collected and stored.

Reynolds Number
$(U \cdot L)/\nu$ - Dimensionless ratio of inertial force to viscous force; the length may represent grain size, depth of flow, or pipe diameter, resulting in different Reynolds Numbers for different purposes. The critical Reynolds Number describes the onset of turbulence. The Reynolds number is defined as velocity multiplied by length divided by kinematic viscosity. It is usually involved wherever viscosity is important, such as in slow movement of fluid in small passages or around small objects.

Ripple
Small triangular-shaped bed forms that are similar to dunes but have much smaller heights and lengths of 0.3 m or less. They develop when the Froude number is less than approximately 0.3.

Roundoff Error
Cumulative error introduced by rounding of the results from individual arithmetic operations because only a finite number of digits can be retained after each operation of a digital computer.
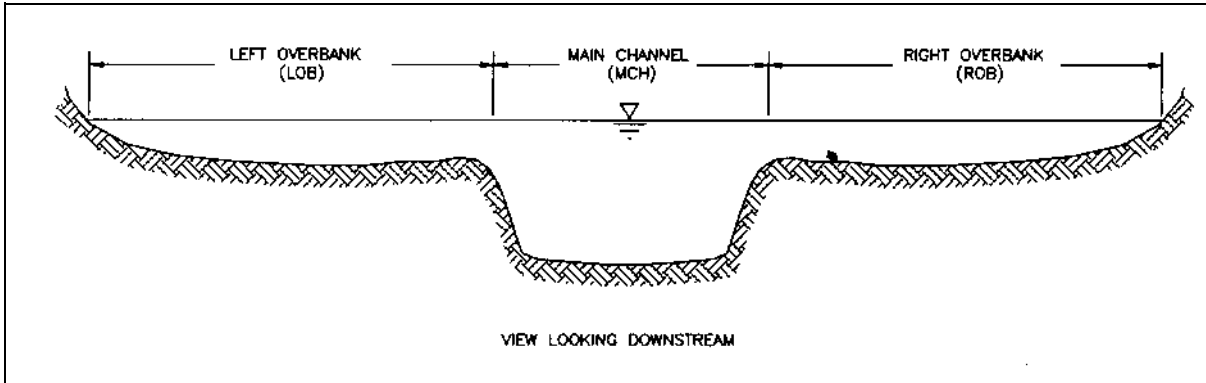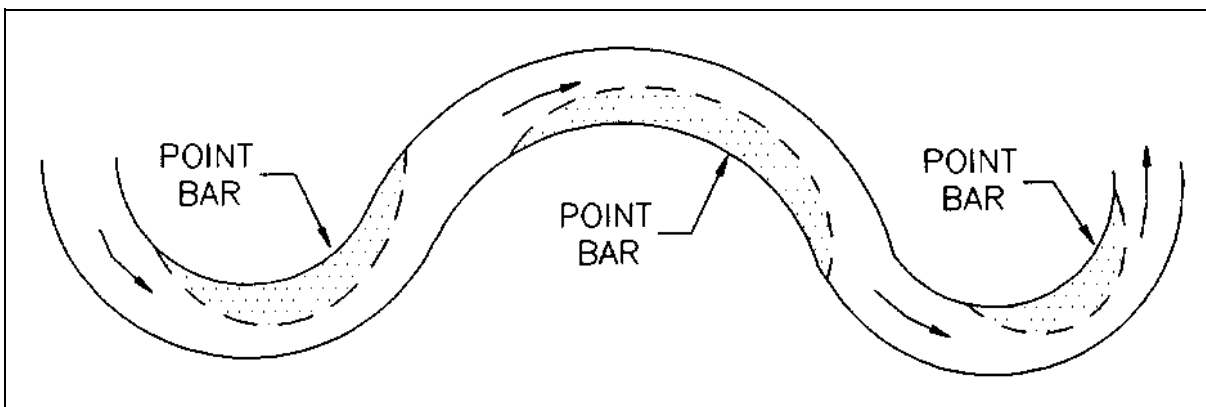
Figure B-2. Example of overbanks

Figure B-3. View of three point bars

Routing
Technique used to compute the effect of channel storage and conveyance on the shape and movement of a flood wave through a river reach. Also used when describing the movement of sediment volumes through a river system.

Routing Model
A model (see Mathematical Model and NUMERICAL Model) for performing flood routing (see Flood Routing).

Runoff
Flow that is discharged from an area by stream channels; sometimes subdivided into surface runoff, groundwater runoff, and seepage.

Scale (or Scale Ratio)
Ratio of a parameter in a model to the corresponding parameter in the prototype.

Scale Effect
Consequence of nonsimilarity between model and prototype resulting from the fact that not all pertinent dimensionless numbers are the same in model and prototype. In a "perfect" model, all pertinent dimensionless numbers are the same in model and prototype. In a "real" model, economics dictates the use of certain materials, e.g., water as a fluid. This means that fluid density and viscosity are not correctly scaled down from prototype to model and, as a consequence, some dimensionless numbers are not the same in model and prototype, resulting in scale effect.

Scaling Laws
Conditions that must be satisfied to achieve desired similarity between model and prototype.

Schematization
Representation of a continuum by discrete elements,

e.g., dividing a real river into reaches with constant parameters.

Scheme (Numerical or Computational)
Systematic program of action for solving the governing equations of a mathematical model.

Scour
The enlargement of a cross section by the removal of boundary material through the action of the fluid in motion.

Sediment
(1) Particles derived from rocks or biological materials that have been transported by a fluid. (2) Solid material suspended in or settled from water. A collective term meaning an accumulation of soil, rock, and mineral particles transported or deposited by flowing water.

Sedimentation
Consists of five fundamental processes: (1) weathering, (2) erosion, (3) transportation, (4) deposition, and (5) diagenesis, or consolidation into rock. Also refers to the gravitational settling of suspended particles that are heavier than water.

Sediment Sample
A quantity of water-sediment mixture or deposited sediment that is collected to characterize some property or properties of the sampled medium.

Sediment Transport Function
A formula or algorithm for calculating sediment transport rate given the hydraulics and bed material at a cross section. Most sediment transport functions compute the bed material load capacity. The actual transport may be less than the computed capacity due to armoring, geologic controls, etc. or greater due to fine material (wash load) that originates upstream rather than from the bed.

Sediment Transport Routing
The computation of sediment movement for a selected length of stream (reach) for a period of time with varying flows. Application of sediment continuity relations allow the computation of aggradation and deposition as functions of time.

Sediment Yield
The total sediment outflow from a drainage basin in a specific period of time. It includes bed load as well as suspended load, and is usually expressed in terms of mass or volume per unit of time.

Semi-Empirical Model
Representation of a real system by a mathematical description based on general physical laws but containing coefficients determined from experimental data.

Shear Force
The shear force is the shear developed on the wetted area of the channel and it acts in the direction of flow. This force per unit wetted area is called the shear stress.

Shear Stress
Frictional force per unit of bed area exerted on the bed by the flowing water. An important factor in the movement of bed material.

Shear Velocity
The shear velocity is defined as the square root of the quantity shear stress divided by fluid density.

Similarity (or Similitude)
Correspondence between the behavior of a model and its prototype.

Simulation
Reproduction of the prototype behavior using a model.

Simulation Model
Mathematical model in which detailed values of the various parameters are computed, usually with respect to both space and time.

Sinuosity
A measure of meander "intensity." Computed as the ratio of the length of a stream measured along its thalweg (or centerline) to the length of the valley through which the stream flows.

Sorting
The dynamic process by which sediment particles having some particular characteristic (such as similarity of size, shape, or specific gravity) are naturally selected and separated from associated but dissimilar particles by the agents of transportation.

Stability (Numerical or Computational)
The ability of a scheme to control the propagation or growth of small perturbations introduced in the calculations. A scheme is unstable if it allows the growth of error to eventually obliterate the true solution.

Stable Channel
A stream channel that does not change in planform or bed profile during a particular period of time. For

purposes of this glossary the time period is years to tens of years.

Stage
The stage is the vertical distance from any selected and defined datum to the water surface.

Stage-Discharge (Rating) Curve
Defines a relationship between discharge and water surface elevation at a given location.

Steady State Model
Model in which the variables being investigated do not change with time.

Stochastic Model
See Probabilistic Model.

Stream Bank Erosion
The removal of bank material by the force of flowing water and the caving of stream banks.

Stream Discharge
The volume of flow passing a stream cross section in a unit of time.

Stream Gage
A device that measures and records flow characteristics such as water discharge and water surface elevation at a specific location on a stream. Sediment transport measurements are usually made at stream gage sites.

Stream Profile
A plot of the elevation of a stream bed versus distance along the stream.

Tailwater
The water surface elevation downstream from a structure such as below a dam, weir, or drop structure.

Thalweg
The line following the lowest part of a valley, whether under water or not. Usually the line following the deepest part, or middle, of the bed or channel of a river.

Theoretical Model
Representation of a real system by a mathematical description.

Three-Dimensional Model
Model defined with three space coordinates.

Tidal Model
Froude number model in which tidal water levels and current fluctuations are reproduced.

Top Width
The width of a stream section at the water surface; it varies with stage in most natural channels.

Tracer Model
A fixed-bed model in which patterns of erosion and deposition are estimated by using tracers of bed material or lightweight sediment proxies.

Transect
A sample area, cross section, or line chosen as the basis for studying one or more characteristics of a particular assemblage.

Transportation (Sediment)
The complex processes of moving sediment particles from place to place. The principal transporting agents are flowing water and wind.

Transport Capacity
The ability of a stream to transport a given volume or weight of sediment material of a specific size per time for a given flow condition. The units of transport capacity are usually given in tons per day of sediment passing a given cross section for a given flow. Transport capacity for each sediment grain size is the transport potential for that size multiplied by the actual fraction of that size class present in the bed material.

Transport Potential
The rate at which a stream could transport sediment of a given grain size for given hydraulic conditions if the bed and banks were composed entirely of material of that size.

Trap Efficiency
Proportion of sediment inflow to a stream reach (or reservoir) that is retained within that reach (or reservoir). Computed as inflowing sediment volume minus outflowing sediment volume divided by inflowing sediment volume. Positive values indicate aggradation; negative values, degradation.

Truncation Error
The error introduced by replacing the derivative terms of a differential equation by finite differences using a

Taylor series and then truncating after a certain number of terms.

Turbulence
The irregular, random, velocity fluctuations within a flowing fluid.

Two-Dimensional Model
Model defined with two space coordinates (i.e., variables are averaged over the third direction).

Unsteady-State Model
Model in which the variables being investigated are time dependent.

Validation
Comparison of model results with a set of prototype data that were not used for verification. Comparison includes: (1) sing a data set very similar to the verification data to determine the validity of the model under conditions for which it was designed; (2) sing a data set quite different from the verification data to determine the validity of the model under conditions for which it was not designed but could possibly be used; and (3) using post-construction prototype data to determine the validity of the predictions based on model results.

Verification
Check of the behavior of a calibrated model against a set of prototype conditions that was not used for calibration.

Water Column
An imaginary vertical column of water used as a control volume for computational purposes. Usually the size of a unit area and as deep as the depth of water at that location in the river.

Water Discharge
See Stream Discharge.

Watershed
A topographically defined area drained by a river/stream or system of connecting rivers/streams such that all outflow is discharged through a single outlet. Also called a drainage area.

Wave Model
Froude number model in which gravity waves are reproduced to provide the driving mechanism for currents, impact forces, wave action, sediment transport, etc.

Wetted Perimeter

The length of wetted contact between a stream of flowing water and its containing channel, measured in a direction normal to the flow.